IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF MASSACHUSETTS

EDWARDS LIFESCIENCES CARDIAQ LLC f/n/a CARDIAQ VALVE TECHNOLOGIES, INC.,	)	Civil Action No. 1:17-cv-10510-ADB
Plaintiff.	)	**FIRST AMENDED COMPLAINT**
v.	)	
NEOVASC INC., a Canadian corporation; and NEOVASC TIARA INC., a Canadian corporation,	)	
Defendants.	)	

Plaintiff Edwards Lifesciences CardiAQ LLC ("CardiAQ"), for its Complaint against Defendants Neovasc Inc. ("Neovasc Inc.") and Neovasc Tiara Inc. ("Neovasc Tiara"), alleges as follows:

I. JURISDICTION AND VENUE

1. This Complaint asserts claims for relief for correction of inventorship.

2. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331, 1332(a)(2), and 1338(a).

3. This Court has personal jurisdiction over Neovasc Inc. and Neovasc Tiara (jointly, "Defendants") by virtue of Defendants' systematic and continuous contacts with Massachusetts, by virtue of Defendants' actions in Massachusetts giving rise to the claims asserted in this Complaint, and by virtue of Defendants' participation in the related case *CardiAQ Valve Technologies, Inc. v. Neovasc Inc. et al*, Civil Action No. 14-CV-12405-ADB.

4. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391(b).

II. PARTIES

5. CardiAQ is a limited liability company with its principal place of business in Irvine, California. Prior to February 2010, CardiAQ maintained its principal place of business in Winchester, Middlesex County, Massachusetts.

6. Neovasc Inc. is, and at all times herein mentioned was, a corporation organized and existing under the laws of Canada with its principal place of business in Richmond, British Columbia, Canada.

7. Neovasc Tiara is a corporation organized in March 2013 and existing under the laws of Canada with its principal place of business in Richmond, British Columbia, Canada. CardiAQ is informed and believes, and thereupon alleges, that Neovasc Tiara is a wholly owned subsidiary of Neovasc Inc.

8. Based upon Neovasc Inc.'s public filings with Canadian securities regulators, Neovasc Inc. conducts a substantial portion of its business in the United States; several of Neovasc Inc.'s largest customers are located in the United States; and for years Neovasc Inc.'s largest customers included non-parties LeMaitre Vascular, Inc. and Boston Scientific Corporation, which are both located in Massachusetts. Moreover, in December 2016, Neovasc Inc. sold 15% of its stock and other assets to Boston Scientific Corporation.

III. PATENTS

9. On November 12, 2013, the United States Patent and Trademark Office issued U.S. Patent No. 8,579,964 (the "'964 Patent") to Neovasc Inc. A true and correct copy of the '964 Patent is attached as Exhibit A. The '964 Patent claims priority to a first provisional patent application filed by Neovasc Inc. on May 5, 2010.

10. On January 26, 2016, the United States Patent and Trademark Office issued U.S. Patent No. 9,241,790 (the "'790 Patent") to Neovasc Tiara. A true and correct copy of the '790 Patent is attached as Exhibit B. The '790 Patent claims priority to the'964 Patent and to the provisional patent application filed by Neovasc Inc. on May 5, 2010. The '790 Patent is subject to a terminal disclaimer that was filed by Neovasc Tiara to obviate a double patenting rejection issued by the patent examiner over the'964 Patent, in which the examiner rejected the claims of the '790 Patent as not being patentably distinct from Claims 1, 3-5, 7, 9-12, 14016 and 19-28 of the '964 Patent.

11. On February 2, 2016, the United States Patent and Trademark Office issued U.S. Patent No. 9,248,014 (the "'014 Patent") to Neovasc Tiara. A true and correct copy of the '014 Patent is attached as Exhibit C. The '014 Patent claims priority to the'964 Patent and to the provisional patent application filed by Neovasc Inc. on May 5, 2010.

12. On September 26, 2017 the United States Patent and Trademark Office issued U.S. Patent No. 9,770,329 (the "'329 Patent") to Neovasc Tiara. A true and correct copy of the '329 Patent is attached as Exhibit D. The '329 Patent claims priority to the'964 Patent and to the provisional patent application filed by Neovasc Inc. on May 5, 2010.

13. On information and belief, CardiAQ alleges that the '964 Patent, the '790 Patent, the '014 Patent, and the '329 Patent are each assigned to Neovasc Tiara Inc.

IV. FACTUAL ALLEGATIONS

A. CardiAQ Shares Technology With Neovasc

14. From June 2009 through April 2010, CardiAQ hired Neovasc Inc. to help construct prototypes of CardiAQ's transcatheter mitral valve implant ("TMVI") device.

15. Neovasc Inc. and CardiAQ's business relationship began on June 4, 2009, after Brian McPherson, the Vice President of Operations and President of the Surgical Products division at Neovasc Inc., sent an unsolicited email to CardiAQ co-founder Brent Ratz advertising Neovasc Inc.'s products and services.

16. At the time Mr. McPherson reached out to CardiAQ, CardiAQ was a start-up developing a TMVI device—a prosthetic heart valve delivered through a catheter to replace a malfunctioning native mitral valve. Mitral regurgitation, one of the most common forms of heart disease, can be treated by replacing the mitral valve, but, currently, the only way to replace the mitral valve is through open heart surgery. By June 2009, CardiAQ had developed a prototype of its TMVI device, intended to replace the mitral valve through a catheter procedure, rather than open heart surgery.

17. CardiAQ's device consists of three elements: the frame, the delivery catheter, and the tissue valve. Between June 2009 and April 2010, Neovasc Inc. worked with CardiAQ to manufacture the tissue valve element. During this time, CardiAQ and Neovasc Inc. entered into several purchase orders, in which they agreed to the work Neovasc Inc. would perform. CardiAQ would send metal frames to Neovasc Inc.'s Vancouver facility, and Neovasc Inc. would attach tissue to the frame and assemble the final TMVI prototype. CardiAQ used the prototypes assembled by Neovasc Inc. for several animal studies.

18. Mr. Ratz regularly exchanged emails and phone calls with Neovasc Inc. employees. Through these emails and phone calls, Neovasc Inc. employees, including engineer Randy Lane, learned about the specifications, ongoing animal testing, and development history of CardiAQ's TMVI device. During this time, CardiAQ sent frames

of its Rev. C, D, and E prototypes to Neovasc Inc., which then attached the tissue valve element.

19. In the context of 2009, when no one had ever built a successful transcatheter mitral valve device, Dr. Quadri and Mr. Ratz gave Neovasc Inc. a front-row view of CardiAQ's TMVI development. During their ten-month business relationship, CardiAQ collaborated with Neovasc Inc. and shared with Neovasc Inc. the designs, prototypes, and development history of CardiAQ's TMVI device. Dr. Quadri and Mr. Ratz shared with Neovasc Inc.—and with Mr. Lane specifically—the inventive process behind their TMVI project.

20. On October 20, 2009, in the middle of CardiAQ and Neovasc Inc.'s business relationship, Mr. Lane drew the first sketch of what would become Neovasc Inc.'s own TMVI device, now known as the "Tiara." After sketching the concept in his lab notebook, Mr. Lane told Neovasc Inc.'s CEO Alexi Marko about the idea, and Mr. Marko instructed Mr. Lane to proceed with an in-house mitral valve program, which he did. Mr. Marko advised Mr. Lane not to tell CardiAQ about Neovasc Inc.'s internal project, explaining in an October 21, 2009 email that, "when appropriate we may need to disclose to [CardiAQ] that we are working on something, but let's cross that bridge when we come to it."

21. Neovasc Inc. and CardiAQ's business relationship ended in April 2010, after CardiAQ leased its own manufacturing facility in California and no longer needed Neovasc Inc.'s services. Until Neovasc Inc.'s relationship with CardiAQ ended in April 2010, Mr. Lane worked on both Neovasc Inc.'s internal TMVI project and CardiAQ's valve assembly. Mr. Lane used the same lab notebook to document his development of

Neovasc Inc.'s valve and his assembly of CardiAQ's valve, at times including notes on adjacent pages. Neovasc Inc. did not restrict any of its engineers from working on both the Tiara project and the CardiAQ project, and several did.

22. Mr. Lane admits that he had never designed a TMVI device prior to working on the CardiAQ device, and his earliest sketches of a TMVI device do not appear until October 2009, months after he started working with Mr. Ratz and Dr. Quadri. The progression of TMVI ideas sketched in Mr. Lane's notebook reflects a trend towards the designs of CardiAQ: Mr. Lane began in October 2009 with a grommet-style TMVI device with no distinct anchors, and he progressed to extended vertical anchors in March 2010, after Mr. Lane first received the Rev. E design earlier, in February 2010.

23. In December 2009, Neovasc Inc. began to prepare its first patent application relating to the Tiara design. Neovasc Inc. filed this application as a provisional patent application on May 5, 2010, naming Mr. Lane as the sole inventor. The U.S. Patent Office issued the '964 Patent on November 12, 2013, naming Mr. Lane and Colin Nyuli, a Neovasc Inc. employee who joined Neovasc Inc. in September 2010, as joint inventors. The '964 Patent is a method patent for a transcatheter mitral valve prosthesis, and issued from an application filed April 28, 2011 (13/096,572) that claims priority to the May 5, 2010 Provisional patent application.

24. The '964 Patent claims numerous features that were included in the prototypes and designs Mr. Ratz and Dr. Quadri shared with Neovasc Inc., including a device that is delivered to a patient's heart via a catheter, either through the apex of the heart or through the femoral vein; that once positioned in the patient's native mitral valve, is allowed to expand and engages the native anatomy on both the atrial and

ventricular sides of the annulus and includes an anterior side and a posterior side; and whose anchors extend between the native chordae tendinae, behind the free edge of the native mitral valve leaflets, and engage onto the native mitral annulus. The prototypes that CardiAQ discussed and shared with Neovasc Inc. had equally spaced anchors, intended to anchor on the native mitral annulus generally. Given the number of anchors and size of the fibrous trigones, it was likely that at least one of CardiAQ's anchoring tabs would anchor against a fibrous trigone.

25. Neovasc Inc. formally announced its internal TMVI project in a June 20, 2011 press release. Since then, Neovasc Inc.'s device has been implanted in over 100 animals. On February 3, 2014, Neovasc Inc. announced the first in-human implantation of its device by physicians at St. Paul's Hospital in Vancouver.

26. Neovasc Inc. never told CardiAQ about its internal TMVI program. Mr. Ratz and Dr. Quadri first learned of Neovasc Inc.'s development of a TMVI device in December 2011, after Neovasc Inc.'s patent application became public. Soon thereafter, in February 2012, counsel for CardiAQ contacted Mr. Marko to express concern that Neovasc Inc. may have incorporated CardiAQ's confidential information into its Tiara device, in violation of a non-disclosure agreement between Neovasc Inc. and CardiAQ.

B. This Court Orders Inventorship Corrected on the '964 Patent

27. In June 2014, after counsel for the parties exchanged multiple letters, CardiAQ filed a first action in this Court (Civil Action No. 14-CV-12405-ADB).

28. In the first action, CardiAQ brought the following seven claims against Neovasc: (1) correction of inventorship of the '964 Patent under 35 U.S.C. § 256; (2) breach of the NDA; (3) breach of the implied covenant of good faith and fair dealing in

the NDA and purchase orders; (4) fraud; (5) misappropriation of trade secrets under Mass. Gen. L. ch. 93 §§ 42, 42A and the common law; (6) violation of Mass. Gen. L. ch. 93A § 11; and (7) injunctive relief.

29. On May 19, 2016, a jury found in favor of CardiAQ on the misappropriation of trade secrets and breach of the NDA claims. The jury also determined that CardiAQ had successfully proven by clear and convincing evidence that Dr. Arshad Quadri and Mr. Brent Ratz contributed to the conception of the '964 Patent. A true and correct copy of the jury verdict is attached as Exhibit E.

30. On October 31, 2016, this Court issued a Memorandum and Order concluding that, considering this sequence of events, as well as the similarities between the prototypes CardiAQ shared with Neovasc and the features of Claim 1, CardiAQ has shown by clear and convincing evidence that it unwittingly contributed to Mr. Lane's inventive process. Even if Mr. Lane contributed some new ideas to the '964 Patent, Dr. Quadri and Mr. Ratz performed a part of the task which produces the invention. Accordingly, the Court ordered that Dr. Quadri and Mr. Ratz be added as inventors of U.S. Patent No. 8,579,964. A true and correct copy of the Court's Memorandum and Order is attached as Exhibit F.

31. On November 21, 2016, this Court entered final judgment in *CardiAQ Valve Technologies, Inc. v. Neovasc Inc. et al*, Civil Action No. 14-CV-12405-ADB. A true and correct copy of the final judgment is attached as Exhibit G. The Federal Circuit affirmed this Court's judgment on September 1, 2017. A true and correct copy of the Federal Circuit decision affirming the judgment is attached as Exhibit H.

32. On December 2, 2016, Dr. Quadri and Mr. Ratz executed an assignment

agreement conveying to CardiAQ their entire right, title, and interest throughout the world in U.S. Patent Application No. 13/096,572 and any patents or applications relating to this application, which includes the '014 Patent, the '790 Patent, and the'329 Patent. A copy of this assignment agreement is attached as Exhibit I.

C. Neovasc Receives Additional Patents Claiming CardiAQ's Technology

33. On January 26, 2016, the United States Patent and Trademark Office issued the '790 Patent to Neovasc Tiara. The '790 Patent discloses the exact same subject matter as the '964 Patent, and the '790 Patent traces its legal priority claim to the same May 2010 Provisional application that Neovasc Inc. filed days after the end of its relationship with CardiAQ.

34. The claims of the '790 are substantially similar to those of the '964 Patent:

U.S. Patent No. 8,579,964 – Claim 1	U.S. Patent No. 9,241,790 – Claims 1, 9
1. A method of anchoring a prosthetic valve in a patient's heart, said method comprising: providing the prosthetic valve, wherein the prosthetic valve comprises an anchor having an atrial skirt, an annular region, a ventricular skirt, and a plurality of valve leaflets, wherein the ventricular skirt comprises a first trigonal anchoring tab disposed on an anterior portion of the ventricular skirt, wherein the anchor has a collapsed configuration for delivery to the heart and an expanded configuration for anchoring with the heart; positioning the prosthetic valve in the patient's heart; expanding the atrial skirt radially outward so as to lie over a superior surface of the patient's native mitral valve, and anchoring the atrial skirt against a portion of the atrium; radially expanding the annular region of the anchor to conform with and to engage the native mitral valve annulus; anchoring the first trigonal anchoring tab against a first fibrous trigone on a first side of an anterior leaflet of the native mitral valve, such that the anterior leaflet and adjacent chordae tendineae are captured between the trigonal anchoring tab and an anterior surface of the anchor, and radially expanding the ventricular skirt thereby displacing the native mitral valve leaflets radially outward.	1. A method of anchoring a prosthetic valve in a patient's heart having a native mitral valve, said method comprising: delivering a prosthetic cardiac mitral valve in a collapsed configuration to the patient's heart, wherein the prosthetic cardiac mitral valve comprises an anchor having a first anterior trigonal anchoring tab disposed on an anterior portion of the prosthetic cardiac mitral valve; radially expanding the anchor from the collapsed configuration to an expanded configuration to engage the native mitral valve; anchoring the prosthetic cardiac mitral valve to the native mitral valve, wherein anchoring the prosthetic cardiac mitral valve comprises expanding the first anterior trigonal anchoring tab radially outward and engaging the first anterior trigonal anchoring tab against a first fibrous trigone of the native mitral valve; and disposing adjacent chordae tendineae between the first anterior trigonal anchoring tab and an anterior surface of the anchor. 9. The method of claim 1, wherein the anchor further comprises an atrial skirt, and wherein expanding the anchor from the collapsed configuration to the expanded configuration to engage the native mitral valve comprises expanding the atrial skirt radially outward so as to lie over a superior surface of the patient's native mitral valve and anchoring the atrial skirt against a portion of the atrium.

35. Like the ’964 Patent, the ’790 Patent claims numerous features that were included in the prototypes and designs Mr. Ratz and Dr. Quadri shared with Neovasc Inc., including a device that is delivered to a patient’s heart via a catheter, either through the apex of the heart or through the femoral vein; that once positioned in the patient’s native mitral valve, is allowed to expand and engages the native anatomy on both the atrial and ventricular sides of the annulus and includes an anterior side and a posterior side; and whose anchors extend between the native chordae tendinae, behind the free edge of the native mitral valve leaflets, and engage onto the native mitral annulus.

36. Only Neovasc Inc. personnel, Randy Matthew Lane and Colin A. Nyuli, are identified as inventors on the ’790 Patent. Neovasc Tiara failed to identify Dr. Quadri, or Mr. Ratz as inventors on the ’790 Patent. Neovasc Tiara also identified only itself as the owner; Neovasc Tiara did not list CardiAQ as a co-owner.

37. On February 2, 2016, the United States Patent and Trademark Office issued the ’014 Patent to Neovasc Tiara. The ’014 Patent discloses the exact same subject matter as the’964 Patent, and the ’014 Patent traces its legal priority claim to the same May 2010 Provisional application that Neovasc Inc. filed days after the end of its relationship with CardiAQ.

38. The claims of the ’014 are substantially similar to those of the ’964 Patent:

U.S. Patent No. 8,579,964 – Claim 1	U.S. Patent No. 9,248,014 – Claims 1, 9

1. A method of anchoring a prosthetic valve in a patient's heart, said method comprising:

providing the prosthetic valve, wherein the prosthetic valve comprises an anchor having an atrial skirt, an annular region, a ventricular skirt, and a plurality of valve leaflets, wherein the ventricular skirt comprises a first trigonal anchoring tab disposed on an anterior portion of the ventricular skirt, wherein the anchor has a collapsed configuration for delivery to the heart and an expanded configuration for anchoring with the heart;

positioning the prosthetic valve in the patient's heart;

expanding the atrial skirt radially outward so as to lie over a superior surface of the patient's native mitral valve, and anchoring the atrial skirt against a portion of the atrium;

radially expanding the annular region of the anchor to conform with and to engage the native mitral valve annulus;

anchoring the first trigonal anchoring tab against a first fibrous trigone on a first side of an anterior leaflet of the native mitral valve, such that the anterior leaflet and adjacent chordae tendineae are captured between the trigonal anchoring tab and an anterior surface of the anchor, and

radially expanding the ventricular skirt thereby displacing the native mitral valve leaflets radially outward.

1. A prosthetic mitral valve for anchoring in a patient's heart having a native mitral valve, said prosthetic mitral valve comprising:

an anchor having a collapsed configuration for delivery to the heart and an expanded configuration for anchoring the prosthetic mitral valve to the native mitral valve,

wherein the anchor comprises a ventricular skirt comprising a first trigonal anchoring tab disposed on an anterior portion of the ventricular skirt extending radially outward and facing toward an atrium of the patient's heart when the anchor is in the expanded configuration, the first trigonal anchoring tab configured to engage a first fibrous trigone on a first side of an anterior leaflet of the patient's native mitral valve such that the anterior leaflet is disposed between the first trigonal anchoring tab and an anterior surface of the anchor when the anchor is in the expanded configuration and anchored to the native mitral valve and configured such that adjacent chordae tendineae are disposed between the first trigonal anchoring tab and the anterior surface of the anchor when the anchor is in the expanded configuration and anchored to the native mitral valve.

9. The prosthetic mitral valve of claim 1, wherein the anchor further comprises an atrial skirt configured to expand radially outward so as to lie over a superior surface of the patient's native mitral valve and anchor against a portion of the atrium when the anchor is anchored to the native mitral valve in the expanded configuration.

39. Like the '964 Patent, the '014 Patent claims numerous features that were included in the prototypes and designs Mr. Ratz and Dr. Quadri shared with Neovasc Inc., including a device that is delivered to a patient's heart via a catheter, either through the apex of the heart or through the femoral vein; that once positioned in the patient's native mitral valve, is allowed to expand and engages the native anatomy on both the atrial and ventricular sides of the annulus and includes an anterior side and a posterior side; and whose anchors extend between the native chordae tendinae, behind the free edge of the native mitral valve leaflets, and engage onto the native mitral annulus.

40. Only Neovasc Inc. personnel, Randy Matthew Lane and Colin A. Nyuli, are identified as inventors on the '014 Patent. Neovasc Tiara failed to identify Dr. Quadri, or Mr. Ratz as inventors on the '014 Patent. Neovasc Tiara also identified only

itself as the owner; Neovasc Tiara did not list CardiAQ as a co-owner.

41. On September 26, 2017, the United States Patent and Trademark Office issued the '329 Patent to Neovasc Tiara. The '329 Patent discloses the exact same subject matter as the'964 Patent, and the '329 Patent traces its legal priority claim to the same May 2010 Provisional application that Neovasc Inc. filed days after the end of its relationship with CardiAQ.

42. The claims of the '329 are substantially similar to those of the '964 Patent:

U.S. Patent No. 8,579,964 – Claim 1, 26	U.S. Patent No. 9,770,329 – Claims 1, 6
1. A method of anchoring a prosthetic valve in a patient's heart, said method comprising: providing the prosthetic valve, wherein the prosthetic valve comprises an anchor having an atrial skirt, an annular region, a ventricular skirt, and a plurality of valve leaflets, wherein the ventricular skirt comprises a first trigonal anchoring tab disposed on an anterior portion of the ventricular skirt, wherein the anchor has a collapsed configuration for delivery to the heart and an expanded configuration for anchoring with the heart; positioning the prosthetic valve in the patient's heart; expanding the atrial skirt radially outward so as to lie over a superior surface of the patient's native mitral valve, and anchoring the atrial skirt against a portion of the atrium; radially expanding the annular region of the anchor to conform with and to engage the native mitral valve annulus; anchoring the first trigonal anchoring tab against a first fibrous trigone on a first side of an anterior leaflet of the native mitral valve, such that the anterior leaflet and adjacent chordae tendineae are captured between the trigonal anchoring tab and an anterior surface of the anchor; and radially expanding the ventricular skirt thereby displacing the native mitral valve leaflets radially outward. **26**. The method of claim **1**, wherein the prosthetic valve has an open configuration in which the prosthetic valve leaflets are disposed away from one another, and the prosthetic valve has a closed configuration in which the prosthetic valve leaflets engage one another, and wherein blood flows freely through the prosthetic valve in the open configuration, and wherein retrograde blood flow across the prosthetic valve is substantially prevented in the closed configuration.	**5**. The delivery system of claim **1**, wherein the prosthetic cardiac valve comprises: an anchor having an atrial skirt, an annular region, and a ventricular skirt; and a plurality of prosthetic valve leaflets, each of the leaflets having a first end and a free end, wherein the first end is coupled with the anchor and the free end is opposite of the first end, and wherein the prosthetic cardiac valve has an open configuration in which the free ends of the prosthetic valve leaflets are disposed away from one another to allow antegrade blood flow therepast, and a closed configuration in which the free ends of the prosthetic valve leaflets engage one another and substantially prevent retrograde blood flow therepast. **6**. The system of claim **5**, wherein the ventricular skirt further comprises a trigonal anchoring tab disposed on an anterior portion of the ventricular skirt, the trigonal anchoring tab adapted to being anchored against a first fibrous trigone on a first side of an anterior leaflet of the patient's mitral valve, such that the anterior leaflet and adjacent chordae tendineae are captured between the trigonal anchoring tab and an anterior surface of the anchor.

43. Like the '964 Patent, the '329 Patent claims numerous features that were

included in the prototypes and designs Mr. Ratz and Dr. Quadri shared with Neovasc Inc., including a device that is delivered to a patient's heart via a catheter; that once positioned in the patient's native mitral valve, is allowed to expand and engages the native anatomy on both the atrial and ventricular sides of the annulus and includes an anterior side and a posterior side; and whose anchors extend between the native chordae tendinae, behind the free edge of the native mitral valve leaflets, and engage onto the native mitral annulus.

44. Only Neovasc Inc. personnel, Randy Matthew Lane and Colin A. Nyuli, are identified as inventors on the '329 Patent. Neovasc Tiara failed to identify Dr. Quadri or Mr. Ratz as inventors on the '329 Patent. Neovasc Tiara also identified only itself as the owner; Neovasc Tiara did not list CardiAQ as a co-owner.

V. FIRST CLAIM FOR RELIEF

For Correction of Inventorship – 35 U.S.C. § 256; U.S. Patent No. 9,241,790

Against Defendants

45. CardiAQ realleges and incorporates herein by reference each and every allegation set forth herein above in Paragraphs 1 through 44, inclusive.

46. Dr. Quadri and Mr. Ratz invented the subject matter of one or more of the claims of the '790 Patent in collaboration with Neovasc Inc.'s representatives, including Mr. Lane. Specifically, Dr. Quadri and Mr. Ratz are inventors of subject matter covered by Claims 1-7, 9, 12, 15, 18, 20, 21, and 23-27 of the '790 Patent.

47. At a minimum, Dr. Quadri and Mr. Ratz performed a part of the task which produced the claimed invention, and on that basis are entitled to be added as inventors on the '790 Patent.

48. However, Neovasc Tiara, as the applicant for the '790 Patent, never

named Dr. Quadri or Mr. Ratz as true and actual inventors of any claim of the '790 Patent. Randy Matthew Lane and Colin A. Nyuli are the only named inventors of the patentable subject matter disclosed and claimed in the '790 Patent, but Messrs. Lane and Nyuli did not invent all of the subject matter claimed in the '790 Patent, and Messrs. Lane and Nyuli are not the only individuals who invented the subject matter claimed therein. Indeed, the contributions of Dr. Quadri and Mr. Ratz to the subject matter claimed in the '790 Patent were more significant in quality than the contributions of Messrs. Lane and Nyuli.

49. Mr. Ratz and Dr. Quadri's contribution to the invention of the '790 Patent and collaboration with various Neovasc employees is corroborated not only by their own testimony in the related litigation, but also the testimony of Mr. Lane in the related litigation, the email communications between the parties, and the physical prototypes of CardiAQ's devices still in Neovasc Inc.'s possession up through the commencement of the related litigation.

50. This Court already resolved the question of Dr. Quadri and Mr. Ratz's contribution to the inventions claimed in the '964 Patent. Because the '790 Patent is a related patent that claims overlapping subject matter with the '964 Patent, issue preclusion prohibits re-litigation of the inventorship of the claimed subject matter.

51. Therefore, CardiAQ seeks, and is entitled to, an Order requiring Defendants and the Director of the United States Patent and Trademark Office to take all steps necessary to correct the named inventor on the '790 Patent.

VI. SECOND CLAIM FOR RELIEF

For Correction of Inventorship – 35 U.S.C. § 256; U.S. Patent No. 9,248,014

Against Defendants

52. CardiAQ realleges and incorporates herein by reference each and every allegation set forth herein above in Paragraphs 1 through 51, inclusive.

53. Dr. Quadri and Mr. Ratz invented the subject matter of one or more of the claims of the ’014 Patent in collaboration with Neovasc Inc.’s representatives, including Mr. Lane. Specifically, Dr. Quadri and Mr. Ratz are inventors of subject matter covered by Claims 1-9, 11, 12, 15, 16, 19-24, and 26 of the ’014 Patent.

54. At a minimum, Dr. Quadri and Mr. Ratz performed a part of the task which produced the claimed invention, and on that basis are entitled to be added as inventors on the ’014 Patent.

55. However, Neovasc Tiara, as the applicant for the ’014 Patent, never named Dr. Quadri or Mr. Ratz as true and actual inventors of any claim of the ’014 Patent. Randy Matthew Lane and Colin A. Nyuli are the only named inventors of the patentable subject matter disclosed and claimed in the ’014 Patent, but Messrs. Lane and Nyuli did not invent all of the subject matter claimed in the ’014 Patent, and Messrs. Lane and Nyuli are not the only individuals who invented the subject matter claimed therein. Indeed, the contributions of Dr. Quadri and Mr. Ratz to the subject matter claimed in the ’014 Patent were more significant in quality than the contributions of Messrs. Lane and Nyuli.

56. Mr. Ratz and Dr. Quadri’s contribution to the invention of the ’014 Patent and collaboration with various Neovasc employees is corroborated not only by their own testimony in the related litigation, but also the testimony of Mr. Lane in the related litigation, the email communications between the parties, and the physical prototypes of CardiAQ’s devices still in Neovasc Inc.’s possession up through the commencement of

the related litigation.

57. This Court already resolved the question of Dr. Quadri and Mr. Ratz's contribution to the inventions claimed in the '964 Patent. Because the '014 Patent is a related patent that claims overlapping subject matter with the '964 Patent, issue preclusion prohibits the re-litigation of the inventorship of the claimed subject matter.

58. Therefore, CardiAQ seeks, and is entitled to, an Order requiring Defendants and the Director of the United States Patent and Trademark Office to take all steps necessary to correct the named inventor on the '014 Patent.

VII. THIRD CLAIM FOR RELIEF

For Correction of Inventorship – 35 U.S.C. § 256; U.S. Patent No. 9,770,329

Against Defendants

59. CardiAQ realleges and incorporates herein by reference each and every allegation set forth herein above in Paragraphs 1 through 58, inclusive.

60. Dr. Quadri and Mr. Ratz invented the subject matter of one or more of the claims of the '329 Patent in collaboration with Neovasc Inc.'s representatives, including Mr. Lane. Specifically, Dr. Quadri and Mr. Ratz are inventors of subject matter covered by Claims 5, 6, 7, and 8 of the '329 Patent.

61. At a minimum, Dr. Quadri and Mr. Ratz performed a part of the task which produced the claimed invention, and on that basis are entitled to be added as inventors on the '329 Patent.

62. However, Neovasc Tiara, as the applicant for the '329 Patent, never named Dr. Quadri or Mr. Ratz as true and actual inventors of any claim of the '329 Patent. Randy Matthew Lane and Colin A. Nyuli are the only named inventors of the patentable subject matter disclosed and claimed in the '329 Patent, but Messrs. Lane

and Nyuli did not invent all of the subject matter claimed in the ’329 Patent, and Messrs. Lane and Nyuli are not the only individuals who invented the subject matter claimed therein. Indeed, the contributions of Dr. Quadri and Mr. Ratz to the subject matter claimed in the ’329 Patent were more significant in quality than the contributions of Messrs. Lane and Nyuli.

63. Mr. Ratz and Dr. Quadri’s contribution to the invention of the ’329 Patent and collaboration with various Neovasc employees is corroborated not only by their own testimony in the related litigation, but also the testimony of Mr. Lane in the related litigation, the email communications between the parties, and the physical prototypes of CardiAQ’s devices still in Neovasc Inc.’s possession up through the commencement of the related litigation.

64. This Court already resolved the question of Dr. Quadri and Mr. Ratz’s contribution to the inventions claimed in the ’964 Patent. Because the ’329 Patent is a related patent that claims overlapping subject matter with the ’964 Patent, issue preclusion prohibits the re-litigation of the inventorship of the claimed subject matter.

65. Therefore, CardiAQ seeks, and is entitled to, an Order requiring Defendants and the Director of the United States Patent and Trademark Office to take all steps necessary to correct the named inventor on the ’329 Patent.

VIII. DEMAND FOR JUDGMENT

WHEREFORE, CardiAQ hereby respectfully demands that Judgment be entered in its favor, and against Defendants, and each of them, as follows:

A. That the Court enter judgment in favor of CardiAQ and against Defendants, and each of them, on all claims for relief alleged herein;

B. That the Court enter a preliminary and permanent mandatory injunction

requiring Defendants, and each of them, and the Director of the United States Patent and Trademark Office to take all steps necessary to correct the named inventor to include CardiAQ's inventors on the '790, '014, and '329 Patents;

C. That Defendants, and each of them, be directed to file with this Court and to serve on CardiAQ within thirty (30) days after the service of the injunction, a report, in writing, under oath, setting forth in detail the manner and form in which Defendants have complied with the injunction;

D. That CardiAQ be awarded reasonable costs, expenses, and attorneys' fees; and

E. That CardiAQ be awarded such other and further relief as this Court may deem just and proper.

JURY DEMAND

CardiAQ hereby demands a trial by jury on all claims for relief so triable.

Respectfully Submitted,
Plaintiff,

CARDIAQ VALVE TECHNOLOGIES, INC.

By Its Attorneys,
KNOBBE, MARTENS, OLSON & BEAR, LLP

/s/ Christy G. Lea

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Dated: October 4, 2017

CERTIFICATE OF SERVICE

I hereby certify that this document filed through the ECF system will be sent electronically to the registered participants as identified on the Notice of Electronic Filing (NEF) and that paper copies will be sent to those indicated as non-registered participants on October 4, 2017.

/s/ Christy G. Lea
Christy G. Lea (admitted *pro hac vice*)